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In the Claims:

1-4. (canceled)

5. (previously amended): A method of detecting variations in a spatially correlated parameter comprising:  
-measuring a selected parameter of each of a plurality of electronic circuits replicated on a common substrate;  
calculating a difference between a value of the selected parameter at a target location and that of an identical relative location with respect to the target location for each of the plurality of electronic circuits to generate a distribution of differences;  
calculating an absolute value of the distribution of differences;  
calculating an average of the absolute value of the distribution of differences to generate a representative value for the residual for the identical relative location; and  
performing a lot averaging for each wafer X-Y coordinate so that a new set of best estimates is re-calculated for each X-Y position.

6. (previously amended): A method of detecting variations in a spatially correlated parameter comprising:  
measuring a selected parameter of each of a plurality of electronic circuits replicated on a common substrate;  
calculating a difference between a value of the selected parameter at a target location and that of an identical relative location with respect to the target location for each of the plurality of electronic circuits to generate a distribution of differences;  
calculating an absolute value of the distribution of

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differences; and

calculating an average of the absolute value of the distribution of differences to generate a representative value for the residual for the identical relative location wherein the common substrate comprises a plurality of common substrates wherein best estimates for a given X-Y location are identical to those of a corresponding location on another of the plurality of common substrates.

7. (original): The method of Claim 6 further comprising re-ordering the plurality of common substrates in a same order in which they were processed.

8-13. (canceled)